REMARKS

Claims 1-52 were filed and are pending. Claims 1-9, 17, 19, 20 and 22-52 were rejected under 35 U.S.C. § 102. Claims 10-16, 18 and 21 were objected to as dependent on a rejected claim. Claims 1, 8, 9, 17, 19, 22, 24, 26, 34, 37, 39, 45, 51 and 52 have been amended. Reconsideration and allowance of Claims 1-52 is requested.

Rejection of Claims under 35 U.S.C. § 102

In the Office Action, Claims 1-9, 17, 19, 20 and 22-52 were rejected under 35 U.S.C. § 102 as being anticipated by Dimitrova et al. (U.S. Patent No. 6,100,941).

As stated at page 2, line 30 to page 3, line 6 of Applicants' specification (as amended):

> According to the invention, a blank segment that does not correspond to recorded visual content is identified in a set of visual recording data. The invention identifies a blank segment using a blank frame detector that is adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame, and a blank segment detector that is adapted to receive input from one or more blank frame detectors regarding a group of frames of visual recording data and to evaluate a characteristic of the group of frames of visual recording data to determine whether the group of frames of visual recording data is a blank segment that does not correspond to recorded visual content.

As further stated at page 7, lines 3-32 of Applicants' specification:

> The invention can be used for a variety of purposes. Blank segment(s) identified by the invention can be removed from a set of visual recording data. This can be desirable, for example, to reduce the amount of data storage capacity used by the set of visual recording data. Blank segment(s) identified by the invention can

be "hidden" during interaction with the set of visual recording data (e.g., during generation of a display from the visual recording data or during processing, such as filtering, of the visual recording data). This can be desirable to facilitate (e.g., make more enjoyable or speed up) viewing a display generated from the visual recording data or to make processing of the visual recording data more efficient (e.g., avoid processing visual recording data that does not represent visual recording content). The invention can also be used to identify and monitor blank segment(s) during a digitization process to enable digitization to be stopped when it is determined that the visual recording data no longer represents recorded visual content. This can be desirable to avoid unnecessarily occupying the digitization apparatus and/or to reduce the data storage capacity required for the digitized data. The identification of blank segment(s) by the invention can also be used to mark the end of recorded visual content in a set of visual recording data. This can be desirable to facilitate viewing a display generated from the visual recording data, to make processing of the visual recording data more efficient, and/or to reduce the data storage capacity required for the digitized data, by eliminating the need to interact with visual recording data that does not represent recorded visual content.

In contrast, Dimitrova et al. teach, in the Abstract of the Dimitrova et al. patent:

> A commercial detection apparatus includes a frame grab thread which acquires frames from an input data stream to be analyzed by a cut detector thread and a filter thread. A commercial detection thread determines whether a commercial has occurred from data created by the cut detector thread and the filter thread stored in a memory. A factor used by the commercial detection thread is whether a black frame has occurred. The input data stream is divided into a plurality of regions and then a maximum and minimum value for a section of these regions is determined and compared to one another. If the maximum and minimum values are close enough, and the maximum value is below a threshold, then the frame is deemed to be black. The commercial detection thread also looks at the average cut frame distance, cut rate, changes in the average cut frame distance, the absence of a logo, a commercial signature detection, brand name detection, a series of black frames preceding a high cut rate, similar frames located within a specified period of time before a frame being analyzed and character detection. During

playback, the detected commercials are either skipped or substituted with alternate content.

Thus, as can be seen, Dimitrova et al. teach an invention regarding commercial detection, i.e., detection in a set of visual recording data of a segment that corresponds to recorded visual content of a particular type, while the invention of the present application concerns identification of a blank segment that does not correspond to recorded visual content in a set of visual recording data. As discussed in more detail below, Dimitrova et al. do not teach identification of a blank segment that does not correspond to recorded visual content, much less teach identification of a blank segment in any of the particular ways recited in Applicants' claims. Nor is the identification of a blank segment that does not correspond to recorded visual content (even more so, the particular ways of identifying a blank segment that are recited in Applicants' claims) obvious in view of the teaching of Dimitrova et al., given the completely different goals of the invention taught by Dimitrova et al. and the invention of the present application.

In view of the foregoing, Applicants submit that each of the claims of the application is patentable over the teaching of Dimitrova et al. Nevertheless, each of the independent claims has been amended herein to further clarify aspects of the invention. In particular, the claims have been amended to make clearer that blank frame determinations made by the blank frame detector(s) are provided as an input to the blank segment detector(s), and to make explicit in the claims the meaning of

"blank segment," i.e., a segment that does not correspond to recorded visual content.

Regarding Claim 1, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a plurality of blank frame detectors, each blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames (col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 1 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a plurality of blank frame detectors, each blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame; and
>
> a blank segment detector, the blank segment detector adapted to receive input from the plurality of blank frame detectors regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content.

First, as already indicated above, Dimitrova et al. do not teach, nor does the teaching of Dimitrova et al. make obvious, a blank segment detector, as recited in Claim 1. The Office Action contends that a blank segment detector is taught by Dimitrova et al. at column 2, line 65 to column 3, line 9 and at column 13, lines 51-67 of the Dimitrova et al. patent, then states that

"detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment." That statement in the Office Action doesn't appear to make any sense; in any event, detecting frames at any particular frame rate does not indicate anything regarding detection of a segment in a set of visual recording data, much less detection of a blank segment in a set of visual recording data, as in Claim 1.

Moreover, the sections of the Dimitrova et al. patent referred to in the Office Action do not teach (or make obvious) a blank segment detector. Dimitrova et al. teach, at column 2, line 65 to column 3, line 9 of the Dimitrova et al. patent (emphasis added):

> In accordance with yet another aspect of the present invention, a system for detecting commercials within a video data stream divided into a plurality of frames comprises a frame grabber for acquiring said frames. A first detector identifies within said data stream at least one of cuts, similar frames located within a first period of time, and black frames. A second detector identifies within said data stream at least one of frames which are similar within a second period of time and frames which are substantially the same color. A third detector identifies said commercials using information produced by said first and second detectors.

There is nothing in the foregoing section of the Dimitrova et al. patent that refers to, or suggests in any way, identifying a blank segment in a set of visual recording data, as recited in Claim 1. Rather, Dimitrova et al. are describing, in that section of the Dimitrova et al. patent, a system for detecting commercials, i.e., a system for detecting recorded visual content of a particular type, not a system for detecting blank segments which, by definition, do not correspond to recorded visual

content. If the Examiner persists in contending otherwise, the Examiner must more particularly identify how that section of the Dimitrova et al. patent teaches identifying a blank segment in a set of visual recording data.

Dimitrova et al. teach, at column 13, lines 51-67 of the Dimitrova et al. patent (emphasis added):

> Additionally, the threads all share the information stored in memory 78. Commercial detection thread 86 uses the information relating to cuts, black frames, static frames, and unicolor frames stored in memory 78 from cut detector thread 82 and filter thread 84. The threads have an order of priority as shown in FIG. 2 in circled numbers 1-4 next to the threads. Frame grab thread 80 has the highest priority because the other threads can not operate without a frame. Commercial detection thread 86 has the least priority because it needs the information from the other threads before it can make its calculations. The priority designation is also indicative of the frequency of use. Frame grab thread 80 and cut detector thread 82 both process information in real time--which is approximately 30 frames per second. Filter thread 84 and commercial detection thread 86 are used far less frequently (e.g. about 13 times less) than frame grab thread 80.

There is nothing in the foregoing section of the Dimitrova et al. patent that refers to, or suggests in any way, identifying a blank segment in a set of visual recording data, as recited in Claim 1. As in the section of the Dimitrova et al. patent discussed above, Dimitrova et al. are describing a system for detecting commercials, i.e., a system for detecting recorded visual content of a particular type, not a system for detecting blank segments which, by definition, do not correspond to recorded visual content. Again, if the Examiner persists in contending otherwise, the Examiner must more particularly identify how the immediately foregoing section of the Dimitrova

et al. patent teaches identifying a blank segment in a set of visual recording data.

Claim 1 is allowable over the teaching of Dimitrova et al. for the reasons given above. Each of Claims 2-7 depends, either directly or indirectly, on Claim 1 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 8, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame of a first type or of a second type that is different from the first type (Figs. 2 and 5; col. 5, lines 47-65); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames (col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 8 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame, and, if so, whether the blank frame is of a first type or of a second type that is different from the first type; and
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 8. Thus, Claim 8 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Regarding Claim 9, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame representing an image that is all or nearly all one color (Figs. 2 and 5; col. 5, lines 47-65), wherein the blank frame detector further comprises: means for determining if, for each color component, the numerical value of a specified number of the pixels of the frame is within a specified magnitude of the average numerical value of that color component for all of the pixels of the frame; and means for determining if the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components, wherein: if, for each color component, the numerical value of the specified number of the pixels of the frame is within the specified magnitude of the average numerical value of that color component for all of the pixels of the frame, and if the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components, then the frame is a blank frame (Fig. 6A); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames (col. 2, line 65 – col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 9 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame representing an image that is all or nearly all one color, wherein the blank frame detector further comprises:
>
> means for determining if, for each color component, the numerical value of a specified number of the pixels of the frame is within a specified magnitude of the average numerical value of that color component for all of the pixels of the frame; and
>
> means for determining if the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components, wherein:
>
> if, for each color component, the numerical value of the specified number of the pixels of the frame is within the specified magnitude of the average numerical value of that color component for all of the pixels of the frame, and if the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components, then the frame is a blank frame; and
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual

recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 9. Thus, Claim 9 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Additionally, Dimitrova et al. do not appear to teach or make obvious the means recited in Claim 9 as part of the blank frame detector. The Office Action indicates that such means are taught in FIG. 6A of the Dimitrova et al. patent. However, neither FIG. 6A nor the associated description in the Dimitrova et al. patent appear to describe a blank frame detector which makes use of color information for individual pixels to determine whether a frame is a blank frame. Instead, FIG. 6A is part of a flow chart showing an overview of a procedure for keyframe filtering which makes use of block signatures derived for blocks in a frame (see column 6, lines 3-6 of the Dimitrova et al. patent).

Regarding Claim 17, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65), wherein the blank frame detector further comprises: means for determining if a specified maximum variation from pure gray at each pixel is less than a specified magnitude; means for determining if the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components; and means for determining if the vertical and horizontal correlation coefficients are within corresponding specified ranges and/or have a specified relationship with one another, wherein: if the specified maximum variation from pure gray at each

pixel is less than a specified magnitude, the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components, and the vertical and horizontal correlation coefficients are within corresponding specified ranges and/or have a specified relationship with one another, then the frame is a blank frame (Figs. 6A and 6B); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames (col. 2, line 65 – col. 3, line 9; col. 13, lines 51-67 – detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 17 recites (as amended):

Apparatus for identifying a blank segment in a set of visual recording data, comprising:

a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame, wherein the blank frame detector further comprises:

means for determining if a specified maximum variation from pure gray at each pixel is less than a specified magnitude;

means for determining if the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components; and

means for determining if the vertical and horizontal correlation coefficients are within corresponding specified ranges and/or have a specified relationship with one another, wherein:

if the specified maximum variation from pure gray at each pixel is less than a specified magnitude, the average numerical value of each color component for all of the pixels of the frame is within a specified range and/or has a specified relationship with the average numerical value of one or more other color components, and the vertical and horizontal correlation coefficients are within corresponding specified ranges

and/or have a specified relationship with one another, then the frame is a blank frame; and

a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 17. Thus, Claim 17 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Additionally, Dimitrova et al. do not appear to teach or make obvious the means recited in Claim 17 as part of the blank frame detector. The Office Action indicates that such means are taught in FIGS. 6A and 6B of the Dimitrova et al. patent. However, neither FICS. 6A and 6B nor the associated description in the Dimitrova et al. patent appear to describe a blank frame detector which makes use of color information for individual pixels, or vertical and horizontal correlation coefficients, to determine whether a frame is a blank frame. Instead, FIGS. 6A and 6B are a flow chart showing an overview of a procedure for keyframe filtering which makes use of block signatures derived for blocks in a frame (see column 6, lines 3-6 of the Dimitrova et al. patent).

Regarding Claim 19, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a snow-static frame (Figs. 2 and 5; col. 5, lines 47-65); a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames (col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment); and means for evaluating, when a frame is determined to be a snow-static frame, the temporal correlation coefficient over a specified window of frames of visual recording data that includes the snow-static frame to either confirm or reject the determination that the frame is a snow static frame (Fig. 5 - step 553).

Claim 19 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a snow-static frame;
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content; and
>
> means for evaluating, when a frame is determined to be a snow-static frame, the temporal correlation coefficient over a specified window of frames of visual recording data that includes the snow-static frame to either confirm or reject the determination that the frame is a snow static frame.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is

adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 19. Thus, Claim 19 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Additionally, Dimitrova et al. do not teach or make obvious a "blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a snow-static frame" or "means for evaluating, when a frame is determined to be a snow-static frame, the temporal correlation coefficient over a specified window of frames of visual recording data that includes the snow-static frame to either confirm or reject the determination that the frame is a snow static frame," as also window of recited in Claim 19. Dimitrova et al. teach that a cut detector thread 82 determines whether a frame is a static frame (see, e.g., column 5, lines 50-53 and lines 62-64 of the Dimitrova et al. patent). However, a "static frame," as that term is used by Dimitrova et al., is not the same as a "snow-static frame," as that term is used in Applicants' claims. Dimitrova et al. use "static frame" to refer to a frame that corresponds to recorded visual content and that is part of a sequence of frames in which little or no motion occurs (see, e.g., column 13, lines 12-28; column 17, lines 35-36; and column 19, lines 1-9). Applicants use "snow-static frame" to refer to a blank frame that does not correspond to recorded visual content, but, instead, includes the well-known display of static that is commonly thought to look like snow

(see, e.g., page 15, line 34 to page 16, line 3 of Applicants' specification). Thus, Dimitrova et al. do not teach or make obvious a blank frame detector that determines whether a frame of visual recording data is a snow-static frame or means for confirming or rejecting such determination, as recited in Claim 19.

Claim 19 is allowable over the teaching of Dimitrova et al. for the reasons given above. Claim 20 depends on Claim 19 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 22, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); and a plurality of blank segment detectors, each blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames (col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 22 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame; and
>
> a plurality of blank segment detectors, each blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual

> recording data is a blank segment that does not correspond to recorded visual content.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, much less a plurality of such blank segment detectors, as recited in Claim 22. Thus, Claim 22 is allowable over the teaching of Dimitrova et al. for at least the reasons given above with respect to Claim 1.

Claim 22 is allowable over the teaching of Dimitrova et al. for the reasons given above. Claim 23 depends on Claim 22 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 24, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames including one or more blank frames of a first type and one or more blank frames a second type that is different from the first type (col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 24 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual

> recording data to determine whether the frame of visual recording data is a blank frame; and
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content and that includes one of more blank frames of a first type and one or more blank frames of a second type that is different from the first type.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, much less whether the blank segment is one including blank frames of multiple types, as recited in Claim 24. Thus, Claim 24 is allowable over the teaching of Dimitrova et al. for at least the reasons given above with respect to Claim 1.

Claim 24 is allowable over the teaching of Dimitrova et al. for the reasons given above. Claim 25 depends on Claim 24 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 26, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames that represent an image that

is all or nearly all one color (Figs. 2, 5, and 6A; col. 5, lines 47-65; col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 26 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame; and
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content and that is all or nearly all one color.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 26. Thus, Claim 26 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Claim 26 is allowable over the teaching of Dimitrova et al. for the reasons given above. Each of Claims 27-33 depends, either directly or indirectly, on Claim 26 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 34, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual

recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a snow-static segment comprising a plurality of blank frames that represent an image that is all or nearly all snow-static (Figs. 2, 5 - step "553", and 6A; col. 5, lines 47-65; col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment).

Claim 34 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a snow-static frame; and
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content and that is all or nearly all snow-static.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 34. Thus, Claim 34 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Moreover, as discussed above with respect to Claim 19, Dimitrova et al. do not teach or make obvious a "blank frame detector adapted to evaluate a frame of visual recording data to

determine whether the frame of visual recording data is a snow-static frame", as recited in Claim 34, and, therefore, do not teach or make obvious a "blank segment detector adapted to ... determine whether [a] plurality of frames of visual recording data is a blank segment ... that is all or nearly all snow-static," as recited in Claim 34.

Claim 34 is allowable over the teaching of Dimitrova et al. for the reasons given above. Each of Claims 35-38 depends, either directly or indirectly, on Claim 34 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 39, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); and a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames, wherein: the blank frame and blank segment determinations are made for successive frames of visual recording data as the frames of visual recording data are acquired or as the frames of visual recording data are being processed for another purpose (Figs. 2, 5 - step "553", and 6A; col. 5, lines 47-65; col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment - commercial detection).

Claim 39 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame; and

> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, wherein:
>
> the blank frame and blank segment determinations are made for successive frames of visual recording data as the frames of visual recording data are acquired or as the frames of visual recording data are being processed for another purpose.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 39. Thus, Claim 39 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Claim 39 is allowable over the teaching of Dimitrova et al. for the reasons given above. Each of Claims 40-44 depends, either directly or indirectly, on Claim 39 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 45, the Office Action stated:

> Dimitrova et al. discloses an apparatus for identifying a blank segment in a set of visual recording data, comprising: a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame (Figs. 2 and 5; col. 5, lines 47-65); a blank segment detector, the blank segment detector adapted to evaluate a characteristic of a plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment comprising a plurality of blank frames; and means for using the detection of one or more blank segments to identify one

or more segment boundaries in the set of visual recording data, each segment boundary delineating a transition from a segment of one type to a segment of another type (Figs. 2, 5 - step "553", and 6A; col. 5, lines 47-65; col. 2, line 65 - col. 3, line 9; col. 13, lines 51-67 - detecting frames in real time at 30 frames/sec, therefore they are detecting 30 frames/sec corresponding to a segment - commercial detection).

Claim 45 recites (as amended):

> Apparatus for identifying a blank segment in a set of visual recording data, comprising:
>
> a blank frame detector, the blank frame detector adapted to evaluate a frame of visual recording data to determine whether the frame of visual recording data is a blank frame;
>
> a blank segment detector, the blank segment detector adapted to receive input from the blank frame detector regarding a plurality of frames of visual recording data and to evaluate a characteristic of the plurality of frames of visual recording data to determine whether the plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content; and
>
> means for using the detection of one or more blank segments to identify one or more segment boundaries in the set of visual recording data, each segment boundary delineating a transition from a segment of one type to a segment of another type.

As indicated above with respect to Claim 1, Dimitrova et al. do not teach or make obvious a blank segment detector that is adapted to determine whether a plurality of frames of visual recording data is a blank segment that does not correspond to recorded visual content, as recited in Claim 45. Thus, Claim 45 is allowable over the teaching of Dimitrova et al. for the reasons given above with respect to Claim 1.

Claim 45 is allowable over the teaching of Dimitrova et al. for the reasons given above. Each of Claims 46-50 depends,

either directly or indirectly, on Claim 45 and is therefore allowable as dependent on an allowable claim.

Regarding Claim 51, the Office Action stated "this is a method claim corresponding to the apparatus clam [sic] 9" and "[t]herefore, claim 51 is analyzed and rejected as previously discussed with respect to claim 9."

As a cursory review of Claims 9 and 51 indicates, Claim 51 is not a method claim corresponding to the apparatus Claim 9. Claim 51 recites limitations that are similar to those of Claim 8 and is allowable over the teaching of Dimitrova for the same reasons as given above with respect to Claim 8.

Regarding Claim 52, the Office Action stated "this is a computer readable medium claim corresponding to the apparatus clam [sic] 9" and "[t]herefore, claim 52 is analyzed and rejected as previously discussed with respect to claim 9."

As a cursory review of Claims 9 and 52 indicates, Claim 52 is not a computer readable medium claim corresponding to the apparatus Claim 9. Claim 52 recites limitations that are similar to those of Claim 8 and is allowable over the teaching of Dimitrova for the same reasons as given above with respect to Claim 8.

As discussed above, Dimitrova et al. teach an invention regarding commercial detection, i.e., detection in a set of visual recording data of a segment <u>that corresponds to recorded visual content of a particular type</u>, while the invention of the present application concerns identification of a blank segment <u>that does not correspond to recorded visual content</u> in a set of

visual recording data. Consequently, Dimitrova et al. do not teach or make obvious identification of a blank segment that does not correspond to recorded visual content, much less teach or make obvious identification of a blank segment in any of the particular ways recited in Applicants' claims. In view of the fact that, in Applicants' view, the invention recited in the claims of the present application is so different from the teaching of Dimitrova et al., if the Examiner contemplates issuing a final rejection of this application in view of the teaching of Dimitrova et al., Applicants' undersigned attorney requests an interview with the Examiner to discuss the application prior to issuance of such final rejection. Such interview is particularly important in view of the new rules promulgated by the Patent Office that are designed to sharply circumscribe the ability to engage in sustained prosecution of a patent application.

In view of the foregoing, it is requested that the rejection of Claims 1-9, 17, 19, 20 and 22-52 under 35 U.S.C. § 102 be withdrawn.

Objection to Claims

In the Office Action, Claims 10-16, 18 and 21 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form to include the limitations of the base claim and any intervening claims.

Claim 9 is allowable over the teaching of Dimitrova et al. for the reasons given above. Each of Claims 10-16 depends, either directly or indirectly, on Claim 9 and is therefore allowable as dependent on an allowable claim.

Claim 17 is allowable over the teaching of Dimitrova et al. for the reasons given above. Claim 18 depends on Claim 17 and is therefore allowable as dependent on an allowable claim.

Claim 19 is allowable over the teaching of Dimitrova et al. for the reasons given above. Claim 21 depends, indirectly, on Claim 19 and is therefore allowable as dependent on an allowable claim.

CONCLUSION

Claims 1-52 were pending. Claims 1-9, 17, 19, 20 and 22-52 were rejected. Claims 10-16, 18 and 21 were objected to. Claims 1, 8, 9, 17, 19, 22, 24, 26, 34, 37, 39, 45, 51 and 52 have been amended. In view of the foregoing, it is requested that Claims 1-52 be allowed. If the Examiner wants to discuss any aspect of this application, the Examiner is invited to telephone Applicants' undersigned attorney at (408) 945-9912.

I hereby certify that this correspondence is being transmitted via facsimile to the U.S. Patent and Trademark Office, facsimile number (571) 273-8300, on October 9, 2007.

10-9-07 David R. Graham
Date Signature

Respectfully submitted,

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